

# EXHIBIT A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Stephen K. Pinto et al.  
Serial No. : 10/826,949  
Filed : April 16, 2004

Art Unit : 2121  
Examiner : Tejal Gami  
Conf. No. : 1606

Title : DIMENSION REDUCTION IN PREDICTIVE MODEL DEVELOPMENT

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION IN RESPONSE TO REQUEST FOR INFORMATION IN ACTION DATED**  
**MARCH 29, 2007**

I, Richard Mansfield, declare:

I am the Chief Architect and Vice President Platform Technologies of Fortelligent, Inc., the assignee of this patent application.

My comments below are each preceded by the related requests of the examiner (in small, bold type).

**I) What were the specific details of the modeling system referred to in the admission?**

More than a year prior to April 16, 2004, the assignee's employees used individual custom-designed models to generate customer relationship management (CRM) information for customers of the assignee. The individual custom-designed models were each generated manually using the experience, expertise, and knowledge of model developers and the capabilities of commercially available statistical software, in particular, solutions from SAS Institute Inc., North Carolina.

From its records, the assignee is unable to reconstruct the contents of any of the specific individual custom-designed models in use prior to April 16, 2003, or the manner in which they were generated other than as disclosed in the information disclosure statement of May 27, 2005.

**a) Do you have any documentation, either hard copies or in electronic form, showing this modeling system? If yes, please provide documentation in response to this interrogatory. Documentation should be interpreted broadly to include, yet not be limited to: press releases, advertisements, brochures, product manuals, web pages, patents and patent applications (both U.S. and foreign), presentations, technical journals, and product specifications.**

None to the best of the undersigned's knowledge.

b) Do any of the parties subject to a duty of disclosure under 37 CFR 1.56 know of where such documentation, as recited above, may be found? Please state the location in response to this question.

See the reply to a) above.

c) Using the language of the claims, what are the specific differences between the modeling system that is mentioned in the admission and the claims?

A claim chart is attached.

d) Were there any other modeling systems created by applicants? If so, please provide specific details of these modeling systems, using the language of the claims, and explain how they differ from the claimed invention.

No other modeling systems were created more than a year before April 16, 2004.

Beginning in March 2003, the assignee began to develop a software application to assist users in developing models. Because no available products met identified requirements, a new computer-based modeling system was developed. The architecture and design of the system were complete by June 2003. Implementation of the initial version was complete by November 2003. However, in August 2003, the model project insight feature illustrated in figure 27D was sufficiently complete that customer data was analyzed and the graphical and tabular reports were used in a project for a customer.

e) Were there any other modeling systems created by applicants? If so, please provide documentation of these systems or state where such documentation may be found.

The computer-based modeling system referred to in d) was the sole modeling system created as it provided the required features.

II) Was the modeling system disclosed in the admission the subject of any of the following types of transactions: offered for sale, bartered or exchanged, licensed, donated or given away, or used for experimental use? Please answer the following interrogatories for each transaction.

a) Where did this transaction occur?

b) What were the details of the transaction?

c) What were the details of the system that formed the basis for this transaction?

- d) When did this transaction occur?
- e) Who were the parties involved in the transaction?

More than a year prior to April 16, 2004, the assignee received raw customer data from customers and transformed the data into customer relationship management (CRM) information (predictive scores) for customers of the assignee using the experience, expertise, and knowledge of model developers and the capabilities of commercially available model creation software, in particular, solutions from SAS Institute Inc., North Carolina. The following table lists the details of these transactions:

Contracting Party	Modeling Service Provided	Model Method	Date of Contract
Cross Country	Response Models for Marketing	Manually developed by skilled model developers/analysts assisted by standard statistical software	Annual Contract, prior to April 2003, with series of contract renewals
Member Works (now Vertue)	Response Models for Marketing	Manually developed by skilled model developers/analysts assisted by standard statistical software	Annual Contract, prior to April 2003, with series of contract renewals
Other parties to whom pitches were made	[details no longer recalled]	[details no longer recalled]	

III) Was the modeling system of this application or of the admission publicly disclosed?

No.

- a) Do you have any documentation, either hard copies or in electronic form, showing what was publicly disclosed? If yes, please provide documentation in response to this interrogatory. Documentation should be interpreted broadly to include, yet not be limited to: press releases, advertisements, brochures, product manuals, web pages, presentations, technical journals, and product specifications.

None other than materials already submitted.

- b) Do any of the parties subject to a duty of disclosure under 37 CFR 1.56 know of where such documentation, as recited above, may be found? Please state the location in response to this question.

The assignee does not know of the location or of any other party that may know of the location of any such documentation.

**4. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to developing "transforming of the variables" and "the adjusting of the population of variables". For each publication, please provide a concise explanation of the reliance placed on that publication in the development of the disclosed subject matter.**

In developing the disclosed subject matter, the applicant relied on portions of the items described in its information disclosure statements. With particular regard to "transforming of the variables" and "adjusting of the population of variables," the inventors used their knowledge, experience and expertise along with such literature disclosed in the attached and previous information disclosure statements to develop the recited features. For the examiner's reference, biographies of the inventors are attached as exhibits 1 through 3.

**5. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to draft the claimed subject matter. For each publication, please provide a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art.**

The inventors are unable to recall any specific such reliance that may have been placed.

**6. In response to this requirement, please provide the names of any products or services that have incorporated the claimed subject matter.**

OASYST<sup>TM</sup> Analytic Platform; this product was not offered for sale prior to April 16, 2003.

**7. In response to this requirement, please state the specific improvements of the subject matter in claims 1 and 7 over the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements. For those claims expressed as means or steps plus function, please provide the specific page and line numbers within the disclosure that describe the claimed structure and acts.**

See the related Response filed by the applicant.

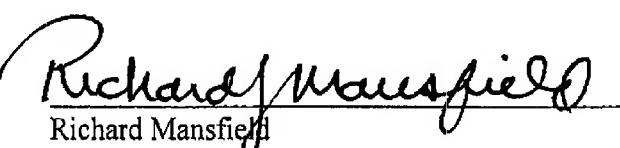
All statements made in this declaration of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements were made

Applicant : Stephen K. Pinto et al.  
Serial No. : 10/826,949  
Filed : April 16, 2004  
Page : 5 of 5

Attorney's Docket No.: 17146-005001

with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued on the application.

Respectfully submitted,

Date: October 1, 2007   
Richard Mansfield

# EXHIBIT B

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Stephen K. Pinto et al.  
 Serial No. : 10/826,949  
 Filed : April 16, 2004

Art Unit : 2121  
 Examiner : Tejal Gami  
 Conf. No. : 1606

Title : DIMENSION REDUCTION IN PREDICTIVE MODEL DEVELOPMENT

**MAIL STOP AMENDMENT**

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

CLAIM CHART

Claim 1	
A machine-based method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to develop individual custom-designed models <i>manually</i> using conventional a statistical software package, in particular, software provided by SAS Institute Inc., North Carolina.
receiving historical multi-dimensional data representing multiple variables,	The prior approach used historical multi-dimensional data.
transforming variables into more predictive variables, including Bayesian renormalized variables, linearly transformed and non-linearly transformed variables and imputed missing values for categorical or continuous variables,	<p>In the prior approach, the model developers/users manually transformed variables into more predictive variables using conventional statistical tools.</p> <p>The prior approach included imputation of missing values for categorical or continuous variables but only with traditional methods.</p> <p>The prior approach did not include Bayesian renormalization.</p>
pruning variables for which the data is sparse or missing,	In the prior approach, pruning of variables for which the data was sparse or missing was done manually.
adjusting a population of variables to represent main effects exhibited by the data	In the prior approach, mainly first-order interaction

and significant interaction and non-linear effects exhibited by the data.	effects were considered.
using the population of variables to generate a predictive model for interacting with a commercial system.	In the prior approach, the model developers/users used their knowledge, experience and expertise to manually generate a predictive model for interacting with a commercial system.
<b>Claim 2</b>	
The method of claim 1 in which adjusting the population of variables to represent interaction effects includes stages of main effect interactions, main effects with main effect interactions and excluded variable interactions, and main effects with main effect interactions and excluded variable interactions together with excluded variable combined interactions.	In the prior approach, mainly first-order interaction effects were considered.
<b>Claim 3</b>	
The method of claim 1 in which the predictive model predicts behavior of a current customer with respect to retention of a current service or product of a vendor.	In the prior approach, the model developers/users manually “[predicted the] behavior of a current customer with respect to retention of a current service or product of a vendor,” using their knowledge, experience and expertise along with conventional statistical software packages.
<b>Claim 4</b>	
The method of claim 1 in which the predictive model predicts behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor.	The prior approach did not include this feature.
<b>Claim 5</b>	
The method of claim 1 in which the predictive model predicts behavior of a current customer with respect to usage of a current service or product of a vendor.	In the prior approach, the modelers/users manually “[predicted the] behavior of a current customer with respect to usage of a current service or product of a vendor,” using their knowledge, experience and expertise along with conventional statistical software packages.

<b>Claim 6</b>	
The method of claim 1 also including enabling a user to reconstruct a sequence of choices involved in the creation of the predictive model.	The prior approach did not include this feature.
<b>Claim 7</b>	
A machine-based method comprising	In the prior approach, the model developers/users used their knowledge, experience and expertise to manually develop individual custom-designed models using conventional statistical software package, in particular, software provided by SAS Institute Inc., North Carolina.
in connection with a project based on historical data about a system being modeled, generating a predictive model, and	The prior approach used historical data about a system. The model developers/users used their knowledge, experience and expertise to and a commercially available statistical software package to manually generate a predictive model.
providing to the a user through a graphical user interface a sequence of dimension reduction having two or more steps.	The prior approach did not include this feature.
<b>Claim 8</b>	
The method of claim 7 in which the system being modeled comprises behavior of prospective or current customers of a vendor with respect to products or services offered by the vendor.	This feature of the system being modeled was part of the prior approach.
<b>Claim 9</b>	
The method of claim 7 in which the predictive model predicts behavior of a prospective or current customer with respect to purchase of a product or service of a vendor.	This feature of the predictive model was in the prior approach.
<b>Claim 10</b>	
The method of claim 7 in which the predictive model predicts behavior of a current customer with respect to retention	This feature of the predictive model was in the prior approach.

of a current service or product of a vendor.	
<b>Claim 11</b>	
The method of claim 7 in which the predictive model predicts behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor.	The prior approach did not include this feature.
<b>Claim 12</b>	
The method of claim 7 in which the predictive model predicts behavior of a current customer with respect to usage of a current service or product of a vendor.	This feature of the predictive model was in the prior approach.
<b>Claim 13</b>	
The method of claim 7 in which the user interface controls staging of the sequence of model generation activities.	The prior approach did not include this feature.

# EXHIBIT C



## Dr. Richard Mansfield, Chief Architect *Senior Management Biography*

**Fortelligent**

Dr. Mansfield has more than 15 years of successful, progressive experience in all phases of mission-critical software product and systems development. He is the author or co-author of a number of software patents. His role at Fortelligent is to design and develop Fortelligent's OASYS Analytic Platform™ and to provide technical oversight of Fortelligent's systems, software and processes to ensure optimization for business advantage.

Dr. Mansfield earned his Ph.D. from Harvard University and a Master's from Yale University in Mathematics. He was a Visiting Scholar at the Johns Hopkins School of Medicine as well.

# EXHIBIT D



## Stephen K. Pinto, Senior Vice President

### *Senior Management Biography*

**Fortelligent**

Steve Pinto has been at the forefront of predictive analytics for over 30 years. Over that time he has formulated many of the modern-day methodologies used in database marketing and modeling. He is responsible for Product Development, Account Management, and client deliverables at Fortelligent. His prior experience includes:

At Mercer Management Consulting, a global strategy firm, Steve was a Vice President and a lead developer of the Customer Relationship Management practice. He was responsible for developing the worldwide practice for CRM at Mercer. The practice develops analytical CRM program on behalf of diversified Global 2,000 clients and manages those programs on an ongoing basis to help generate increasing shareholder value.

Prior to his work at Mercer Management Consulting, Steve was the Managing Director of the Analytic Consulting Group at Epsilon, a former division of American Express. Steve was responsible for creating and deploying analytical CRM programs on behalf of the largest financial institutions in the country.

Before Epsilon, Steve Co-Founded Applied Research of Cambridge, a worldwide market research firm later acquired by Cap Gemini, a global strategy consulting firm.

Steve is a widely published author on the subject of predictive analytics and is on several editorial boards including the *Journal of Database Marketing*.

# EXHIBIT E



## Dr. Donald Rubin, Scientific Principal *Senior Management Biography*

**Fortelligent**

Fortelligent's Scientific Advisor is the world-renown statistician, Professor Donald Rubin. His role at Fortelligent has been to contribute to the development of Fortelligent's Platform by designing unique algorithms and methodologies that enable Fortelligent to maintain an ongoing competitive edge.

Professor Rubin is a world-leading thinker in Statistical Science. In 2002 he was one of the most quoted scholars in the field of statistics. Currently he is Chairman of the Statistics Department at Harvard University, a position he has held for 20 years. He is the John L. Loeb Professor of Statistics and key PhD advisor to Candidates for degrees in Statistics at Harvard as well.

Prior roles held at Harvard University include:

- Chairman, Department of Statistics Senior Search Committee
- Director of Graduate Studies, Department of Statistics

Faculty Staff, Program on Educational Policy and Governance

Professor Rubin is a widely known force in the statistical community, having published over 300 articles and book on various statistical-related topics.